

Claims

1. Human monoclonal antibodies which react specifically with the islet cell antigen IA-2.
2. Human monoclonal antibodies as claimed in claim 1, wherein they react specifically with IA-2ic, the cytoplasmic part of IA-2.
3. Human monoclonal antibodies as claimed in claim 1 or 2, which can be obtained by the process steps of immortalizing human lymphocytes from prediabetics or diabetics with high serum antibody titres to IA-2, culturing the immortalized lymphocytes with growth factors while simultaneously removing inhibitory factors, detecting the IA-2-specific human monoclonal antibodies in the culture supernatant, cloning the human immortalized cell line which produces this antibody in the presence of feeder cells which contain no cytotoxic T lymphocytes, proliferating this immortalized cell optionally with the addition of growth factors, and isolating the monoclonal antibody produced by this clone.
4. Human monoclonal antibodies as claimed in one of the claims 1 to 3, wherein they belong to the IgG class.
5. Human monoclonal antibodies as claimed in claim 4, wherein they belong to the subclass IgG1.

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6. Human monoclonal antibodies as claimed in claims 1 to 5, wherein they can be obtained from the cell line IA-2, 96-3-1 with the depositary number DSM ACC2365.
7. Human monoclonal antibodies as claimed in claims 1 to 6, which can bind to IA-2 in an equivalent manner to the antibodies that are produced by the cell line IA-2, 96-3-1, depositary number DSM ACC2365.
8. Cell line IA-2, 96-3-1 with the depositary number DSM ACC2365.
9. Process for producing human monoclonal antibodies as claimed in one of the claims 1 to 7 comprising the steps immortalizing human lymphocytes from prediabetics or diabetics with high serum antibody titres to IA-2, culturing the immortalized lymphocytes with growth factors while simultaneously removing inhibitory factors, detecting the IA-2-specific human monoclonal antibodies in the culture supernatant, cloning the human immortalized cell line which produces this antibody in the presence of feeder cells which contain no cytotoxic T lymphocytes, proliferating this immortalized cell optionally with the addition of growth factors and isolating the monoclonal antibody produced by this clone.
10. Use of a human monoclonal antibody as claimed in one of the claims 1 to 7 as a standard in a method for determining antibodies to an islet cell antigen.

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11. Use of a human monoclonal antibody as claimed in one of the claims 1 to 7 as a receptor in a method for determining antibodies to an islet cell antigen.
12. Use of a human monoclonal antibody as claimed in one of the claims 1 to 7 for isolating the islet cell antigen IA-2.
13. Method for detecting antibodies to the islet cell antigen IA-2 in a sample, wherein a monoclonal antibody as claimed in one of the claims 1 to 7 is used as a standard.
14. Anti-idiotypic antibody which is directed against antibodies that react with the islet cell antigen IA-2 which can be obtained by immunization with an antibody as claimed in one of the claims 1 to 7, immortalizing the spleen cells of the immunized animals, cloning those immortalized cells which produce antibodies that bind to antibodies against IA-2 and isolating the antibodies produced by these clones by known methods.
15. Method for detecting the islet cell antigen IA-2 in a sample, wherein at least one monoclonal antibody as claimed in one of the claims 1 to 7 is used as the binding partner.

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